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A N
A C C O U N T
O F S O M E
REMARKABLE ANCIENT RUINS,

Lately discovered in the
H I G H L A N D S,
A N D
NORTHERN PARTS of SCOTLAND.

In a Series of LETTERS to G. C. M. Esq;

By JOHN WILLIAMS, Mineral Engineer.

E D I N B U R G H:
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Библиотека

ГИИТИИМА НИА ЯСАМН

Библиотека

ГИИА НИОИИ



LETTER from the AUTHOR,

I offer to the publick this paper
TO THE HONOURABLE

L O R D K A M E S.

Now I desire to let you know more

about the subject of my paper concerning the

I My Lord, of infinite antiquity

and beauty, to breed his goat over

the **A B O V E** a year ago, a copy

of my paper concerning the

vitrified forts was sent to London,

to be disposed of to the Booksellers;

but they looked upon it

as a fiction. The subject is both

singular and extraordinary. How-

ever, I have advanced nothing in

my

my narrative but what is strictly true, except such passages as are professedly conjectural.

I OFFER the Public this brief specimen of the ruins of the vitrified forts, and dry stone conick structures. If this paper should come to a second edition, I will be able to add a great many more of both kinds, and other ancient ruins similar to them, which I have seen and heard of, in many corners of SCOTLAND, since my paper was wrote; but they are most numerous in the Highlands and Isles.

As your LORDSHIP's name is so well known in the literary world, a few lines from your pen, will add

add authority to my paper, and remove the discouragements to its publication, which arise from my being so little known.

I have the honour to be,

My Lord,

Your Lordship's most obedient,
and
and most humble servant,

Edin', roth
March 1777.

JOHN WILLIAMS.

To the Honourable
LORD KAMES.

His

His Lordship's ANSWER

EDINBURGH, 11th March 1777.

S I R,

I THINK it every man's duty to do justice to merit, whether he have a name or not in the literary world. And as far as my evidence can go, I give you leave to say to the world, That I have long known you to be an honest man, and that your veracity may be depended on. I willingly add my opinion, That your discovery of buildings being cemented by means of fire, is a curious fact, that ought to make a figure in the

the history of arts. The vitrified forts you mention, must have been erected before mortar was known in Scotland ; and it is a notable instance of the extraordinary shifts people were reduced to in the infancy of arts. This discovery of your's, will serve to detect an error that several ingenious Naturalists have fallen into, of burning mountains formerly in Scotland,—verified, say they, by the burnt remains still to be traced. I suspect, that these remains are no other than the debris of the vitrified forts you mention.

I am

Your faithful and obedient servant,

H E N R Y H O M E.

To Mr John Williams.

Finally after a long time
against many difficulties, we were able to
see the nation established, and
we are now a brotherhood in a new world.
Brotherhood is to consist in ridges
of hills of snow, planted with trees,
and with paths leading through them
so that I can get to the ground
in winter, and make tracks up
and down, and go where I want.

but among the following names
the following words are
most common to about one-half
of the lists:

LETTER I.

REMARKABLE ruins of ancient buildings and places of strength, and other remains of antiquity, in any country, have an excellent effect on the imagination, and on the mind; and where authentic records are wanting, perhaps we have no better helps to form a proper idea of the people inhabiting such a country, in the remote periods of antiquity.

The Highlands of Scotland being formerly almost an inaccessible country, made it but very little known ; yet, I believe few countries abound more in monuments of antiquity.

A

Our

Our late historians have given us a pretty full account of the genius and manners of the present Highlanders; and since the roads of communication were made, some men of knowledge and observation have galloped through some parts of the Highlands, who have given us a few cursory hints of what they saw or heard, in their transient circuit. But the greatest part of the Highlands, is still in some degree inaccessible to strangers, for want of roads and public houses.

You know, Sir, that I have been in most parts of the Highlands, and that my business led me to the most inaccessible places, where I have seen many monuments of the power and skill of the ancient inhabitants of that country, so remarkable, indeed so extraordinary, that I have not so much as heard of the like being seen in any other part of the world; and as I am pretty confident you have had no farther information on the subject, than the few hints I have given you some years ago, I imagine

a fuller account of some of them may be entertaining, and may point out something worth seeing, if you happen to pass through that country.

I will begin with the ancient vitrified forts, or fortified hills. These ancient ruins are so very singular, that I believe such a thing was not so much as thought of, or imagined, in these ages of the world, till I gave you a brief account of them, a few years ago.

When I saw the first of these vitrified forts, I was greatly amazed; and the more so, that I had never so much as heard of such a thing. I immediately made enquiry concerning them, but could get no information. I conversed, and corresponded with some of the most intelligent gentlemen in Scotland, and found they had never heard of such a thing; of course, I began to look upon these singular ruins as a discovery of my own, and resolved to make search for more of them, in which I was abundantly successful; as, in a few years, I discovered sev-

ral of them in the Highlands and North of Scotland.

In giving you some account of these extraordinary remains of antiquity, I will touch at some things common to them all, and will point out others peculiar only to some of them.

EACH of the vitrified forts I have yet seen, are situate on the top of a small hill ; small in comparison of the large Highland mountains. These hills every where overlook, and command the view of a beautiful valley, or widely extended level country.

They have always a level area on the summit, of less or greater extent ; and this level area has been surrounded by a wall, which, as far as I can judge by the ruins, has been very high, and very strong : But what is most extraordinary, these walls have been vitrified, or run and compacted together by the force of fire ; and that so effectually, that the most of the stones have been melted down ; and any part of the stones not quite

quite run to glass, has been entirely enveloped by the vitrified matter; and in some places the vitrification has been so complete, that the ruins appear now like vast masses, or fragments of coarse glass, or flags.

Though these fortified hills have a level area on the summit, yet they are always difficult of access, except in one place, which has every where been strengthened by additional works.

I have seen some of these hills of a long oval figure, which were accessible at both ends; and when that is the figure, such have been strongly fortified at each end, as now appears by the ruins.

For your farther satisfaction, and for your instruction, if you should travel through that country, I will point out a few places, where I have seen these extraordinary ruins.

THE first I will take notice of, is on the hill of Knockfarril, the south side the valley of Strathpeffar, two miles west of Dingwall in Rossshire.

This

This hill is about nine hundred feet of perpendicular height above the valley; has a perfect command of the view of the whole valley, and of the country for some miles eastward.

This hill is of a long figure, exceeding steep on both sides; but the ridge falls on both ends with an easy slope.

The level area on the top of this hill, is a pretty large oval, and the works on it have been of great extent; and appear, by the ruins, to have been of great strength and consequence in their time.

L E T -

the shield contains two crossed hawks, one above the other, with a ring in their talons; the base of the shield is surmounted by a crest depicting a hawk perched on a rock.

LETTER II.

In my last I observed, that the level area on the summits of the fortified hills, was surrounded and inclosed by a vitrified wall.

The area within walls at Knockfarrel, is about a hundred and twenty paces long, and about forty broad. But as they could not, it seems, conveniently take in the whole length of the ground that was moderately level, there have been very high, and, apparently, very strong works at each end, without the surrounding wall.

At the desire of the honourable board of annexed estates, I made a section quite through the ruins of the vitrified fort, here, beginning without all the ruins, and cutting to the rock all the way, not only through the ruins, but also through

the

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L E T -

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At the desire of the honourable board of annexed estates, I made a section quite through the ruins of the vitrified fort, here, beginning without all the ruins, and cutting to the rock all the way, not only through the ruins, but also through the

the inclosed area, in order to observe every thing that appeared, both in going through the ruins, and under the green surface of the area, within the ruins of the walls.

I forgot to observe before, that there has been one or two wells in each of these old forts.

I began the cut at Knockfarril, not exactly in the middle, but a little nearer the east end, to be quite clear of two hollow places, which, upon examination, I found to have been wells.

I began to dig here, quite on the outside of all the ruins. At first we met with nothing in digging, but rich black mold (made by sheep and goat lying and dunging for ages) mixed with large stones, and fragments of the vitrified ruins.

This continued the same for several yards, only that the stones and fragments increased more and more as we advanced ; and when we came near the ruins of the wall, we met with little besides stones, and fragments of the vitrified matter.

When

When we had advanced to the ruins of the wall, on the south side, we found it difficult to get through; for, though it is evident the wall has fallen down, and broke to pieces in the fall, yet many of the fragments are so large and strong, and the vitrification so entire, that it was not easy breaking through. However, with the help of crows, and plenty of hands, we tumbled over some very large fragments, which at first began to go whole down the hill, but when they gained velocity of motion, they dashed to pieces against the rocks, and ended in a furious shower at the bottom of the hill.

I was obliged to get under one large fragment, which I left as a bridge over the south end of the cut.

On the north side, we began on the outside of the wall, immediately in the rubbish of the vitrified ruins, and soon came to pretty high ruins of a wall, more hard and strong than any thing of the kind I had seen before; which I did not expect here, as this wall was almost

wholly grown over with heath and grass. I found it necessary to undermine the ruins of this north wall, to let its own weight contribute its help to bring it down.

The height of the ruins of this north wall, is now no less than twelve feet perpendicular, though certainly all fallen down; what then must it have been when standing? It appears quite evident, that the whole of the vitrified wall, surrounding the inclosed area, has fallen flat outward. These walls were certainly very strong at first; but what is there, that its own weight, or some other circumstance, does not bring to ruin?

They were indeed built on a firm and solid rock, but that rock had a little declivity outward, quite round; so that time, and their own weight, on such a leaning foundation, would certainly bring them down, outward.

LETTER III.

I KNOW not what effect reading the account of these old ruins has upon you ; but they appear to me so very singular and extraordinary, that the more I see and consider them, the more I am astonished.

I am of opinion, and it appears by the ruins, that the whole of this surrounding wall on Knockfarril, has been run together by vitrification, much better than the most of the kind I have seen.

In some others, the stones seem to have been partly run down, and partly enveloped by the vitrid matter ; but here, the whole wall has been run together into one solid mass : At the same time, in any section of this wall, or of the fragments of it, we see many pieces and ends of stones, not quite melted down ; but these

are so much one mass with the vitrified matter, that it is evident the whole wall was melted down, and run together in the building of it, and that it was not any matter they poured among the stones in the wall; for I could never see in this wall, which I examined very minutely, so much as one stone, nor a piece of a stone, that was not affected by the fire, and less or more of it vitrified.

Immediately on the inside of this surrounding wall, there are ruins of vitrified buildings, which seem to have been worse done, and so are fallen into more decay than the outer walls. I imagine these inner works have been a range of habitations, reared against, or under the shade of the outer wall.

These inner buildings appear to have gone quite round; but they have been much higher and larger on the north side, facing the sun, than on the south side, facing the north.

I saw nothing in the middle of the area, but rich black mold, mixt with stones,

bits.

bits of bones, which the Highland workmen said were deers bones, and small fragments of the vitrified ruins, which evidently had been scattered in the course of time, and mixed with the soil; and the soil has been still increasing by the dung of all sorts of bestial, and the vegetation those manures would occasion.

I opened both the holes, which looked like the ruins of wells, and soon came to water.

I caused the men dig as much as they could in the water; so that I could not go deeper, without a proper apparatus.

In opening these wells, I found nothing but good rich soil, and a chancestone, or piece of the vitrified stuff; but I could not go above five or six feet down, though the men wrought as nimble as they could; and when I examined, next morning, the holes I had dug over night, I found more than three feet of water in each.

I also made a cut into a very high heap of ruins, without the surrounding wall,

at

at the west end of this place of strength. This seems to have been an outwork of great strength and consequence, as the ruins are very high, and very wide; but of what fort it has been, is hard to determine, as it is now an undistinguishable heap of rubbish.

I began low enough here, that I might be certain I was without the foundation of all former buildings. At first, I met with nothing but rich black mold, mixt with large stones, and fragments of the vitrified walls, as in the section of the inclosed area; and when we advanced into the ruins, I found nothing but a confused heap of calcined stones, dust resembling ashes, with larger and smaller fragments of the vitrified matter.

I only went half way through this heap of ruins, which is no less than twenty-three feet perpendicular, from the top of the heap of ruins, down to the foundation; from which it plainly appears, it has been of great height when standing.

I said above, that this vast ruin is only an undistinguishable heap of rubbish ; notwithstanding, it is very evident, it has been a vitrified building, as there are in it fragments of the vitrified walls, of different dimensions, and in different degrees of decay. Some of these fragments are many feet every way, and so strong I could hardly get them broke ; others, large indeed, but easy broke to pieces, and a great deal fallen down into rubbish, which appeared like calcined stones and ashes ; and when we were advanced into the middle, it was all one heap of vitrified ruins from top to bottom, broken and crushed to pieces by its own weight.

At the out-skirts of these ruins, and at the bottom of the hill below ; there is a great quantity of large stones of all sizes and shapes, which have not been touched by fire ; from which it appears to me, there has been some sort of stone buildings going round, on the outside of the vitrified walls : And I imagine these dry stone buildings have been raised on

the

the south side only, with a proper space between them and the vitrified walls, for the purpose of keeping in, and securing their cattle from their enemies. One great reason why I think so, is, that when cutting into the outwork at the west end of Knockfarril, I saw, under the ruins, a stratum of dung, about three inches deep, pressed hard by the weight of the ruins. This stratum of dung continued for many yards, as we advanced.

I have observed the remains of dry stone ruins going round some part of the outside of all the vitrified forts I have seen, and always at some little distance from the vitrified ruins; and to the best of my memory, they are on the south side of the ruins of the fort, where the situation will admit of it: They are always sure to be on the flattest side of the hill, for the ease of the cattle standing or lying, and on the sunny side, if possible, for their comfort. And I have frequently observed, that where there was not room enough on the level area above, to

have

have this dry stone inclosure without the surrounding vitrified wall, on the summit, they have made a large ditch on that side of the hill which has the easiest slope; and on the outside of these ditches, there are every where dry stone ruins; which makes it evident to me, that these outer fences have been to secure their cattle. Where they had not room on the level above, they were obliged to cut a level place below, as the cattle could not stand upon the slope.

LET-

TER III.

old fortifications and walls, &c. &c. and
indeed no very habitation or town

LETTER IV.

TH E full name of this remarkable fortified hill, is Knockfarril-naphian, which I am told by gentlemen skilled in the Gallic language, is Fingal's place on Knockfarril, this being the name of the hill.

The tradition of the common people concerning this place, is, that it was the habitation of giants; when giants were in the land! That the chief of these giants, was Ree Phian M'Coul, which, I am told, means King Fingal the son of Coul.

I think it no wonder at all, they suppose such extraordinary buildings as these the work of giants. We often meet with traditions that appear much more absurd. And the tradition of the wonderful feats Fingal and his heroes were said to perform, might, in after ages, very well make them

pass

pass for giants ; especially when those feats would be exaggerated in after ages by poetical fiction.

It is highly probable, that this was one of Fingal's habitations or places of strength, as this country, and the neighbouring countries of Sutherland, Caithness, and the coast of Moray, were subject to be invaded by the Northern powers.

The coasts of the Moray and Pentland friths, were the places they commonly infested ; and I make no doubt but these countries were the scenes of Fingal's wars with those powers, so often celebrated by Ossian, and other ancient Highland bards. To place the scene of those wars, and to make Fingal king only of that little rocky country now called Morven, a small district in the county of Argyll, in my opinion, betrays a criminal degree of ignorance of the Highlands in any one that writes of these matters, and does but little honour to so renowned a hero to confine him to so small a spot.

I have read Ossian, and I am pretty sure, from circumstances, I can fix some of the scenes of those poems in Moray and Caithness, &c. I have, indeed, been tempted to imagine, that this remarkable place, Knockfarril, is the ruins of Selma, the palace or habitation of Fingal, so often celebrated by Ossian.

Many circumstances give their joint suffrage, to make this conjecture appear at least probable.

This is a beautiful, and a centrical situation.

The buildings on this fortified hill, have been of great extent, and appear, by the ruins, to have been of great strength, and better executed than any of the kind I have seen.—There are clear vestiges of a remarkable road, leading from this place through the hills, towards the north-west sea.

Several places in this neighbourhood bear the names of some of Fingal's heroes, which places might have belonged to the particular men they are named after;

and

and there are near this, a fine river and valley, which to this day bear the name of Cona, the place of the famous bard Ossian.

When I first saw the vestige of the ancient road leading to Knockfarril, I wondered what it could be; as it has been cut very deep and wide, and the bank thrown out, is still very high, on the side of the hill near the old ruins.

The people of the country call this the giants hunting road; but it appears to me, it was a road of communication between this and some other remarkable place of strength, or between this and the north-west sea, towards which it leads. This road does not take the nearest cut over hill and dale, but seems to search every where for the hardest ground. In some places I have seen it go a considerable way about, to shun a peat-moss, and other soft ground.

I followed the track of this road three or four miles, till it went in among the hills, the east side of Binwevus, but could
not

not go much farther, without proper conveniences for lying out all night.

It appears evidently to have been a road for men and horses, but not for carriages, as it is in some places very narrow.

They have, indeed, cut wide and deep, where the soil was soft; yet I observed, that in going up the side of a hill, where the ground was hard and firm, the road was not above five feet wide,—just fit for men and horses to pass in a line.

I have not discovered such a road as this, leading to any other of the fortified hills I have seen.

Whether the place of strength on Knockfarril was the famous ancient Selma, or not, I will not pretend to assert; but I cannot help being persuaded, that the famous bard Ossian had his residence in this neighbourhood.

He celebrates the vales, the streams, and the hills of Cona, as the scenes where he exercised his muse.

The river Cona, now called Conan, is about three short miles from Knockfarril.

This

This river, so famous of old, is now one of the finest rivers in the North.

It waters a beautiful valley of great length, before it emerges from among the hills; and then it winds its way thro' a beautiful, extensive level country, in which it forms itself into many a long and smooth canal, and charming limpid stream, before it enters the tide near Dingwall. The valley watered by this river, is still called Strath-conan, which is but a little variation, in so long a time, from Strath-cona.

Many of the hills on both sides this fine river, bordering on the low country, are beautifully wild, and command an extensive prospect to the East. When the aged bard would ascend one of these hills in the morning, and behold the glory of the rising sun, enlightening the whole prospect before him, and darting his all-clearing beams to the place of his retreat, and gilding the streams of his Cona with burnished silver; no wonder if his muse was fired to celebrate the morning glories
aborreg

of

of the great luminary, when shining over
“ the blue ocean, on the sides of the Mor-
“ ven.”

There are many romantic scenes, of woods, rocks, and falls of water, near the foot of the glen or valley.

These, with the hills, the widely extended country, and various views of the river which the hills command, would be a charming retirement for the aged bard.

In short, there are so many concurring circumstances, to make it appear probable that this country was the chief residence of the famous warrior Fingal, that I would spin out this letter too long, were I to advance as many of them as have come under my observation. But the goodness and situation of the countries on both sides the Moray frith, and the numerous remains of places of strength, and other monuments of remote antiquity, are to me as good as a thousand proofs, that there have been very remarkable people inhabiting these countries in those early periods,

periods, and that they had very powerful enemies to oppose.

I have conversed with many sensible gentlemen, about the extent of Fingal's dominions; and they all agree with me, that he was king of all the countries north side the Grampians. I am of opinion he reigned over all to the North of the Forth; and that all the North and Highlands, in old time, went under the general name of Morven, from the vast size and height of the hills.

We find Ossian brings Fingal's heroes as far south as the river Carron, to oppose the Romans. I have not Ossian's works by me; but I do not remember that the bard gives us any hint, of their having a very long march, or of their assisting any neighbouring power, but defending their own country; which I think strengthens the probability, that their country was near the banks of the Forth.

There is another circumstance I am just going to advance, which makes it still more probable. The largest vitrified fort

I ever saw, is on the south side the Grampians, in the shire of Angus; and there is another which I have seen, about twelve miles west from Stirling.

I do not suppose it can be proved with any certainty, what people used this extraordinary mode of fortification; but if it is allowed to be Fingalian, I think it will appear pretty evident, that Fingal's dominions reached from the Pentland frith, to the frith of Forth.

I would not insist so much on these points, which rather belong to an able historian, than to me, who should only give you an account of what I see in viewing these remarkable ruins, but that I want to give you all the hints I can, which I hope you will correct, and give me your opinion; as I know you to be a much better judge of these matters.

LETTER V.

ON the south side of Knockfarril, at the foot of the hill, there is a prodigious quantity of large stones tumbled down from the ruins above, which have never been hurt by fire; and there is a great quantity of the ruins of the vitrified walls tumbled down, part of which is grown over with grass and heath, and part now above ground.

The hill is as steep, and much higher on the north side, yet there are not many stones nor fragments above ground, at the bottom, on this side; the reason of which, I suppose, is the great depth of soil and clay that is at the bottom, and on this north side of the hill, which is still sliding down, and would soon cover the fragments that would tumble down this side.

D 2 The

The rock of all the fortified hills I have yet seen, is more or less of that coagulated kind, commonly called the plumpudding rock. The rock on the head of Knockfarril, and half way down, is so strong a species of it, that it appears like vast strata of water-rounded stones and gravel, like the sea beach, cemented together with lime, and some iron.

This sort of stone is easily run down with a strong fire; and I have observed in other places, where the rock was less of this kind, and had not much lime in the composition of the stone, that the vitrification seemed not to be so well done, as the ruins in such places appear like calcined stones and ashes, with here and there a fragment sticking together, to make me sure it is the ruins of a vitrified building.

I will now, Sir, give you a very strong proof of the great antiquity of these vitrified walls. When I made the section at Knockfarril, in some places I cut through heath that grew out of half a foot deep of peat-moss, under which I found the
vitrified

vitrified ruins as strong as any where else. A great deal of the ruins at Knockfarril is grown over with heath and grass ; and the moss was certainly made in the course of a very long time, by the branches of the heath falling off yearly, and rotting.

At the east end of this old place of strength on Knockfarril, there are vitrified ruins, that stretch a considerable way in a line, along the ridge of the hill, without the surrounding wall.

The end next the fort of this outwork, seems to have joined the surrounding wall, as the ruins of both are now close together. The ridge of the hill at this east end, is very narrow, and yet very accessible ; and the outwork on this ridge is so narrow, that it must either have been two parallel walls closed above, with a passage between them under cover ; or else a high wall, broad enough to walk on, and annoy their enemies, with some way to ascend at the far end.

I rather incline to think it has been the last, and that there was a break or cut about

about the middle of this wall, over which they had a bridge, to be drawn or removed upon occasion. There are now in these ruins, some indications of there having been such a bridge in this wall. There are visible remains of a ditch on the north side, where I suppose the bridge to have been, to prevent any access to the fort that way, on the outside of this wall.

Many of the vitrified fragments of this outwork are very large, and the vitrification very entire, or in a good state of preservation; so that, in all probability, two or three thousand years would make very little alteration on them.

L E T -

LETTER VI.

IN my last I finished my account of Knockfarril, in which I was the more particular, once for all, as I had made the sections, and examined that remarkable ruin with more care and time than any other; and, as I have given a pretty full account of that, I can pass the quicker by others, to save repetition.

The next vitrified fort I will point out to you, is on the hill of Craig-Phadrick, immediately above the house of Muirtoun, two miles west of Inverness.

This ancient ruin has as noble a situation as can be imagined. It is on the summit of a hill much about the height of Knockfarril, right above the head of the Moray frith; the view of which it commands on both sides, all the way down, 'till the sight is lost in the ocean.

Turn

Turn the eye west and north, and it commands that branch of the sea which goes up to Beuley; and looking south, you see that beautiful piece of water, Lochness. So much for the watery prospect, which is truly great and beautiful; but a full view of the land it commands, would be ravishing, to a lively, and benevolent imagination.

Westward, you see the country of the Ard, and Beuley. North, you see a considerable part of Ross-shire. Eastward, immediately at the foot of the hill, you have a full view of the town and lands round Inverness, and all the way as far, and farther than Forres; and southward, you see the country between Lochness and the town.

Besides the charming views of the cultivated countries round this admirable situation, you see from it a great deal of the Highlands, south, west, and north; and many extensive openings among the Highland hills.

The

The fortifications on this hill have been extensive, and appear by the ruins to have been very strong.

There is one thing here, peculiar only to this ruin, which I have not yet seen on any other fortified hills, viz. There are here distinct ruins of two vitrified walls quite round the inclosed area, and three at the entrance on the east end. But it is common in other places of this kind, to have additional works at the entry.

The inner wall here appears to have been very high and strong; but, on the contrary, the outer wall seems to me, never to have been of any great height. It is founded on the bare, solid rock, about six or eight paces from the inner wall; goes quite round, but what remains of it is so low, that I cannot think it was designed for defence, unless it was to secure their cattle, which I imagine it was intended for, as I do not remember to have seen any dry stone ruins here. Perhaps good stones, for building a dry stone rampart to defend their cattle, were not easy

got here, and that they rather chose to make a low vitrified wall.

I saw a good deal of this outer wall, seeming to me entire, sticking to the firm, bare rock, where it was first run, not above four or five feet high, but it must have been some higher.

I cannot help looking upon what remains entire of this low vitrified wall, as the greatest curiosity of any ruins in Europe.

This is a specimen in little of the vitrified walls, not fallen to total ruin, which may help to give an idea of what sort of structures they were, that have produced such vast, though undistinguishable ruins. I am happy to have seen this entire portion of the remains of the vitrified buildings, as it will enable you the better to conceive my meaning, in what I have wrote, and what I purpose to advance in some future letters, concerning these vitrified ruins.

The area within walls here, I mean within the inner wall, is about eighty paces

L E T T E R VI. 35

paces long, and twenty-seven broad; and both the inner and outer walls appear, by the ruins, to have been exceeding well vitrified.

The rock of this hill is of the plum-pudding kind; and there seems to be a good deal of lime, in the cementing quality of the stone.

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In a broad valley above the town, rising
and sloping like a broad terrace, stand

LETTER VII.

two or three hills, so steep on one
side, and so bold on the other, as to give

ABOUT twelve or fourteen miles from Inverness, there are other two of these fortified hills, called, Castle-Finlay, two miles north-east, and Dun-Evan, two miles south-west of the castle of Calder, in the shire of Nairn.

The fortifications on Dun-Evan have been of considerable size and strength, as the area within walls, on the top of the hill, is about seventy paces long, and thirty broad.

Dun-Evan is situate near the skirts of the Highland hills, about six miles south fide the Moray frith, and commands an extensive prospect both of sea and land. Some part of the stone here, is of the plumpudding kind; but the greatest part of the rocks are granite, and some of them a grey whin, mixt with talk.

The

The vitrified ruins are more wasted here, than at the two places I mentioned before. I imagine they never were so well done, owing to the unfitness of the stone. The only entry to this place was at the east end, which has been strongly fortified, not with vitrified buildings, but with some sort of dry stone work. I could make nothing of the ruins at the entry to this place, as all I can see is a prodigious heap of large stones on the ascent of the hill, about a hundred paces in length, and of great height.

The south side of this hill is inaccessible steep; and the north side is steep, though more accessible than the south.

There has been a large ditch on the north side of this hill, about half way down the slope, and some sort of dry stone building the outside the ditch, which I suppose was the place they had to secure their cattle in time of danger. There are water springs in the side of this hill, and evident remains of a well within the vitrified wall on the summit.

Castle-

Castle-Finlay is the lowest fortified hill I have seen ; nor have the buildings on it been of any great extent, as the area on the summit, within the vitrified wall, is only about forty paces long, and seventeen broad : But though it is low, it commands a fine prospect of the Moray frith, and of the country between and the sea ; only not so extensive a prospect as Dun-Evan, which is situated much higher.

There remains *vestigia* of a ditch, and of dry stone ruins, all round this little hill, near the bottom of the slope.

I have seen a small vitrified ruin, three miles from Fort-Augustus, which I think is called Tor-dun Castle ; and a much more considerable one, on the west side of Gleneves, in Lochaber, about three miles south side the garrison of Fort William. This in Gleneves seems to have been a very strong one, and the vitrification to have been very well executed, as there is a good deal of the vitrified walls still remaining, very strong, and in a good state of preservation.

LET -

LETTER VIII.

I have kept your attention to my fortified hills, a long time, in the Highlands, and North. I will beg leave, in this letter, to lead you, at once, as far south as the castle-hill of Finaven. The vitrified ruins at Finaven, are about a short mile west side the kirk of Aberlemny, about half a mile north side the public road, half way between Brechin and Forfar, in the shire of Angus.

The castle-hill of Finaven commands an extensive prospect to the North, of a rich corn country, which is only terminated by the Highland hills, at a considerable distance. It also commands the view of most of the shire of Mearns to the north-east, almost as far as Stonehaven, and a considerable way west; but if I remember well, there is little or no south prospect.

spect from this hill, it being one of the northmost of a cluster of little hills like itself.

The area within walls here, is the longest I have yet seen, being about a hundred and fifty paces long, and thirty-six broad. Before I saw this place, I was very curious to know if there were any of these extraordinary ruins south side the Grampians. This one satisfied me in that point. I make no doubt of many more being found, if I had time to search for them; as I found many, upon searching for them, in the North and Highlands. Now I am anxious to know, if there be any of them on the south side the Forth, and in other parts of the island.

I wish, Sir, that you would be so good as speak and write to some of your ingenious acquaintance, south side the Forth, to put them on the hunt.

I will give you a hint or two, to instruct them what sort of hills to suspect and examine.

Many

Many of the fortified hills are about the height of Arthur's seat, near Edinburgh ; some of them a little higher, and some lower. The vitrified ruins often appear at a distance, crowning the head of the hill, like some sort of an inclosure which they cannot understand the meaning of. The fortified hills are generally very steep on one or more of the sides. If a great heap of large stones are seen, near the head of such a hill, or going round any part of the sides of it, they should examine the summit. When they are going among the hills, and happen to see the appearance of any old inclosure on the top of a hill, they should examine it, whether much ruins appear or not ; for in some places the vitrified ruins are nearly all grown over with heath and grass, and often appear, at first sight, like the ruins of some earth or sod buildings, which, perhaps, is one reason why these extraordinary ruins were not discovered sooner, in this age, which abounds in men of observation and enquiry. No

doubt but their remote, uncouth situation, is the greatest reason for their being so long unobserved.

If this singular method of fortification shall in time be found to spread over most of the island, we may then suppose the art has been known to all the ancient Britons, but in the course of time fell into disuse; perhaps when cementing with lime was discovered or made known to them. If these ruins are only found north side the Forth, then it must only have been practised by some people inhabiting the North, who perhaps were so brought down by some reverse of fortune, that the art of erecting vitrified walls fell with themselves.

However this might be, I am persuaded it was practised in the early ages of antiquity, before they knew the use of lime for a cement in Britain.

The fortifications on the castle-hill of Finaven, appear, by the ruins, to have been built very high, and very strong.

I observed before, that they were of greater extent within the vitrified surrounding wall, than any other I have seen ; at the same time, the ruins on Knockfarril, including the outworks at each end of the inclosed area, are much longer. That the vitrified wall inclosing the area on the summit at Finaven, has been very high, is evident, as the ruins are now very high, though fallen all into confusion.

The rock of this hill, and all the little hills near it, is of the plum pudding kind. The only appearance of an entry to this fort, is at the east end, which has been strongly defended by additional works. As there appears to have been a little space between these outworks and the wall of the garrison, I suppose they have had a draw-bridge to enter over the walls ; or else they have entered from below, and have stood on these high places, to annoy their enemies when besieged. But it is now very difficult to determine, what

was the real design of every thing I see about these places, the ruins being so very old and undistinguishable.

The surrounding vitrified wall here, inclosing the area of the garrison, did not occupy the whole of the level ground on the summit of the hill, it being double the extent of what they inclosed. There appears ruins of a ditch, and very high dry stone buildings at the west end, and there seems to have been more than one well within the fort; one, at the west end, has been very deep and large, out of which, perhaps, they took part of the materials for the vitrified walls. I make no doubt but the dry stone buildings here, as in other places, was their cow-fort. At a time when cattle were the whole riches of the country, it was necessary to have their principal property secured from the enemy.

LET -

LETTER IX.

IN former letters I have given you a particular description of the vitrified forts, and have pointed out the situation of several of them, in the Highlands and North. I will now beg leave to trouble you with a few hints upon the method I suppose they took, to erect such extraordinary buildings ; and confess, I think this the most difficult task I have yet undertaken, in these letters. The ruins are so uncommon, that I have few hints from any thing I ever saw, to help me out.

Remarkable discoveries in any art or science, have been made out from hints, and sometimes from very trifling ones : But no matter ; they serve as first principles for the mind to work upon.

I do not believe there ever was a discovery made in the world, whether trifling or important, without a hint from something seen or heard of. The liveliest imagination must have something to work upon.

It seems reasonable to suppose, that some great fires the ancient inhabitants of these countries have used, either in running bog-ore for their iron utensils, or in offering burnt sacrifices, would give them the first hint, that a very strong fire would vitrify stones and earth. I suppose the first iron they had in the North and Highlands, I believe I may say in all parts of this island, was made from the bog-ore, which is still to be seen in great abundance, in some parts of the North and Highlands.

This ore was run down, by making a large fire out of doors, in any place exposed to the wind, and laying a stratum of the ore above the fire.

This air-blast would give it the first fusion; then they took it to the smithy forge,

forge, and wrought it up with the hammer, till it was made fit for use.

I have seen several places, where, in later ages, they took this method to run lead-ore. When one of these fires was at the hottest, it would vitrify some of the stones and earth immediately under it.

It is evident, from the earliest records of antiquity, that it was of old the universal practice of almost all nations, to offer burnt sacrifices ; and it was customary, on solemn occasions, to burn a bull or heifer, whole ; which would require a very hot fire.

Either of these was sufficient to give the ancients a hint, that a very strong fire would melt the stones.

When I have given them this hint, I suppose that some genius among them (for there have been geniuses in all ages and countries) improved the hint, till he brought it the surprising length of erecting vitrified walls. When I have brought the question thus far, I still find it difficult

cult to conceive how they could erect such vast buildings, run, and compacted together, by the force of fire.

I have tried the subject several ways in my own mind, for some years past, and find difficulties in most of the methods I have yet imagined. I will give you the only one that satisfies myself, as the most feasible.

I imagine they have raised two parallel dykes of earth or sods, in the direction or course of their intended wall or building ; and left a space between them, just wide enough for the wall. I suppose these two parallel dykes, the groove, or mould in which they were to run their wall. This groove between the two dykes I suppose they packed full of fuel, on which they would lay a proper quantity of the materials to be vitrified. There is no doubt but a hot fire would melt down the stones, especially if they were of the plumpudding kind, and not too large. And the frame of earth would keep the materials, when in fusion, from running

running without the breadth of their intended wall. This being the foundation, I suppose they have added new fires, and more materials, and raised their mould of earth by degrees, till they brought the whole to the intended height, and then have removed the earth from both sides the vitrified wall. I am confident, from the appearance of the ruins, that the materials were run down by the fire, in some such method as this. In all the sections of the larger and smaller fragments of the vitrified ruins I have seen, I never saw the least appearance of a stone being laid in any particular way. I never saw a large stone in any fragment of these ruins; nor any stone, nor piece of a stone, that was not affected by the fire, and some part of it vitrified; and all the bits of stone that appear in these fragments, appear higgledy-piggledy,—just as we would suppose they would fall down in the fire, when the materials were in a state of fusion.

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I have often seen lime-stone for land burnt in turf-kilns, which were nothing but two parallel dykes raised about six or seven feet high, and the ends built up as they filled in the stone and fuel.

These answer very well in moderate weather; but in a high wind, I have seen the lime-stone vitrified to that degree, that it would cost the farmers much labour to dig out the vitrified matter, and they would have but very little lime for their pains; yet the turf-kiln would stand it so well, that they would burn more than once in the same kiln.

This I give as an example, that they might run their vitrified wall in a groove between two turf walls.

A gentleman in Edinburgh, of great knowledge and veracity, told me, that his father had a brick-kiln built on the edge of a pretty steep bank; and that while the kiln was burning, a high wind one night increased the heat to such a degree, that in the morning great part of the kiln was vitrified, which ran, in a lava, a considerable way down the hill.

LET-

LETTER X.

I Observed near the beginning of my first letter, " That I have seen in the Highlands, many monuments of the power and skill of the ancient inhabitants of that country."

I cannot help thinking, that the account I have given you of the vitrified forts, sufficiently justifies that assertion.

It must have been an arduous task, to carry such prodigious quantities of materials to the tops of hills, several of which are higher than Arthur's seat near Edinburgh, and much worse to ascend.

It has been alledged, that many of the nobility and gentry of Scotland complained, either openly, or secretly, of the great hardship of being obliged to carry up materials, to fortify the hill of Dunfinan, in the time of Macbeth ; and

Macduff's oxen failing to take up their load, was made the ground or pretence of a quarrel between Macbeth and him.

I have been on the top of Dunsinan, where I only saw the ruins of dry stone buildings, without the least appearance of there having been any cement or mixture among the stones. In every other respect, Dunsinan is exactly the same as one of the fortified hills.

It is a hill of the same figure, situation, and height; and the ruins surround the outer verge of the level area on the summit, like Knockfarril, &c.

The level area within the surrounding ruins at Dunsinan, is now green grass, without the least appearance of there having been any buildings, unless they were creel-houses, such as are now used in many parts of the Highlands.

It is not improbable, that Macbeth might take the hint, from some of the hills I am writing about, to fortify Dunsinan.

It

It is only doing bare justice to remark here, how true to history, and to nature, our great dramatic poet has been in this instance. Dunsinan is situate on the south side of the extensive valley of Strathmore, the view of which it commands to the south-west, and north-east, farther than the eye can reach ; and the view northward is only terminated by the Highland hills, which are removed at a considerable distance.

The beauty and excellency of this noble situation, our great Shakespeare sufficiently points out, in his tragedy of Macbeth, by setting the tyrant to work, in time of danger, to fortify himself in a place he judged from its situation impregnable ; by placing his people continually on the look-out, and at last discovering Malcolm's army carrying green boughs, which they took to be “ the wood of Birnham moving towards ‘‘ Dunsinan,” to the great astonishment of the tyrant.

The

The wood of Birnham is near Dunkeld, opposite Dunfinan, north side the valley, about twelve or fifteen measured miles distant; and the whole space between, is a level, beautiful country, which may help to give an idea, what a charming prospect this hill altogether commands.

If it was so difficult a task, in so late an age as Macbeth's, to carry up materials to fortify the summit of Dunfinan, when we may suppose Scotland increased in population, and improved in the use of carriages, &c. how difficult then must it have been, to carry up, I think I may say, twenty times the quantity of materials, to the top of Knockfarril, &c.?

I think twenty times as much a moderate computation, when we include the prodigious quantity of fuel they must use, and consider what little room the materials would run into when vitrified; and that there is now, if I remember well, five or six times as much ruins on Knockfarril, as on Dunfinan.

So

So much for the marks of the power of the ancient Britons, in the North, and Highlands ; which I have the fortune to be able to illustrate, by an example pretty well known in history. I wish I had such helps, to display the marks of their great skill in erecting the vitrified forts. But here I can do little more than refer you to the ruins themselves, which are so singular and extraordinary, that I believe any of us would now be at a stand, to know how to set about such a work.

I observed before, that I imagine the practice of erecting vitrified walls, was prior to the knowledge of the use of lime for a cement in this island, which I suppose was introduced by the Romans : And, in my opinion, the great antiquity of this practice, is a proof of the wisdom and skill of those who practised it ; especially when we consider, that the Highlands do not abound in any bituminous substances, that might answer the purpose of lime for a cement.

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L E T -

LETTER XI.

IN a former letter I gave you all the traditions I could pick up in the Highlands, concerning the fortified hills, and added some hints of my own, which seemed to favour those traditions; in which I am not certain, that I was not too warm, as if I was positive those traditions were perfectly satisfactory. I beg leave, in this letter, to assure you, that the more I look at, and consider these surprising ruins, the more I am inclined to imagine, they belong to a period much earlier than what is assigned to Fingal.

Indeed, Sir, I will very frankly own, that after viewing many of these vitrified forts over and over; after thinking and conversing much, and writing many letters concerning them, I am this minute as far from my purpose, with regard to

their

their history, as the moment I saw the first of them.

Fingal being the most renowned name in the traditional songs of the bards, and the Highlanders seeing these ruins so very extraordinary, might give them to him, without any reason for so doing, but mere conjecture.

When I wrote the letter concerning those traditions, they seemed to carry an air of likelihood, nor do I yet think them improbable; but when I consider the matter more impartially, I do not see why the numerous ruins of dry stone round buildings, so frequently seen in the North and Highlands, should not be assigned to Fingal, as well as the vitrified forts.

Tradition calls these dry stone buildings, Pictish; and I believe our best antiquaries reckon the Picts and the ancient Britons the same people.

I have been often a little vexed, since I first saw the ruins of the vitrified forts, that I could never hear any thing quite satisfactory concerning them. So that

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after

after all the pains I have taken to inform myself, I am obliged at last to leave them just as I found them.

It is a great loss to the history of the northern parts of this island, that there are no records of any thing that was done a very few hundred years ago, but the songs of the bards ; and we must suppose them, at best, but very imperfect ; and that in times of great calamities, or of great revolutions, the most of those songs would be lost.

There are great numbers of ruins of the dry stone round buildings, in many parts of the Highlands, which, as I observed before, are commonly called Pictish. I believe it is now as difficult to determine, to what people these belonged, as the vitrified forts ; yet there are some of them almost entire to this day. I have seen many of them so entire, that I could easily judge what they had been.

When I saw the first of these dry stone conick buildings, I imagined them much more modern than the vitrified forts ;
and,

and the tradition of their being Pictish, confirmed me in that opinion ; but when I consider the matter more deliberately, I can give no good reason for that supposition.

They discover, indeed, greater marks of bodily strength, and rustic hardiness, than of art and skill ; but this may appear, at first sight, a proof of their great antiquity ; at same time it must be owned, that all nations and countries have undergone great revolutions in knowledge, and cultivation of the arts.

The chief point of skill I can discover in these buildings, is their circular and conick figure, which certainly is the strongest for dry stone buildings.

These dry stone conick buildings, were raised with very large, and very good stones—if they could get them ; but they always used the stones as they found them. There is no mark of a tool on any of them. However, they certainly were at pains to get very good stones.

I have seen some of them, which had been built with good, hard, flat-bedded stones, and square at the edges, that are in part entire to this day; and I imagine would have been altogether entire, and continued so perhaps to the end of time, if idle or greedy hands had not thrown them down, for the sake of the stones.

The stones are not in the least decayed in some of these, but are as fresh and good as the day they were built.

There is one of these in Ross-shire, about three miles above Ardmore, on the south side the frith of Dornock, that was built with stones so very good, that they are not in the least hurt by time. This conick building was half entire when I saw it; that is, the lower half of the cone was standing: And I was told, that a *modern Goth* pulled down the most of the upper half, to repair a miln dam; the fate of another famous ancient structure, a few years ago, farther south.

These conick dry stone buildings were not all of a size. As far as I can remember,

ber, the area of the circle, on the ground within walls, is from thirty to forty feet diameter. They were all certainly built of dry stone, without any kind of cement or mixture, as is now evidently seen by many of them in part standing.

They have generally very large stones at and near the foundation ; always broad bedded, which would not be easily drawn out by their enemies.

They had only one low door to enter these conick forts.

There is one thing I must not forget to remark ; that in all these rustic old buildings, they had a cavity on the ground, running quite round in the heart of the wall. This cavity was about five feet high, narrower above than below, which was covered above with broad strong stones, and the wall carried solid from the roof of the cave to the top of the building.

These buildings were raised exactly in form of a sugar-loaf, with a little opening above, to let down light to the area below.

below. I imagine that the circular cavity in the bottom of the wall, was their only keeping-place for provisions, &c. They made their fire in the middle of the area, and sat and lay round it, as they do still in other sorts of houses in some parts of the Highlands; and the hole in the top served to let out the smoke, as well as to let down light.

These may seem to people in the southern parts of the island, exceeding rustic buildings, either for strength or habitation; and it must be owned they are so now, but I question if there were any better in the most improved parts of the island when these were built.

LET -

LETTER XII.

IN my last I began to give you some account of the ancient dry stone circular buildings, the ruins of which are very numerous in many parts of the Highlands, and North; and will endeavour, in this letter, to finish my remarks of this species of antique remains.

In some places there never was any stone buildings belonging to this species of ruins, but only the bare cone; but in other places, there have been two, and three circular stone buildings, surrounding the round pyramid. These were about five or six paces distant from each other, and the inmost the same distance from the sugar-loaf, which they entirely inclosed.

I cannot tell to what height these outer circles were raised, as I never saw any of them

them entire, though I saw many of them in ruins ; but they did not seem to me to have been very high ; so that the round pyramid, which was always high in proportion to the diameter of the circle at the base, would tower eminently in the midst of the other circles, and make a conspicuous figure from afar.

These outer circles, however, have been pretty high and wide, as may now be judged by the ruins, which are considerably bulky ; and they were everywhere arched, or hollowed with rustic cavities quite round, exactly such as those I described in the bottom of the wall of the conick buildings.

Where these additional circles are found, the ruins spread out to a considerable extent, but the bare cone could not contain many people ; however, it was pretty strong, to an enemy who had nothing but his bow and arrows in his hand.

The great number of these ancient ruins, sufficiently compensates for the smallness

smallness of their size. I have seen some of them on the sea-coasts of Sutherland and Caithness, within a mile of each other. I imagine one reason for their being so near other, in such places, is owing to the unevenness of the surface of the ground ; for I observe, that these ruins keep sight of each other, all round both sides the Moray frith ; which makes it appear very probable they were so intended, to be able, by some signal, to give the alarm to one another, in case of an invasion, or an enemy appearing on any part of the coast.

Though these ruins keep sight of each other all round the coasts of the Moray frith, they are most numerous in Sutherland and Caithness.

I have been told they keep sight of each other in some places across the country, from sea to sea, in the North Highlands. This I cannot ascertain.

All I can say to it, is, that I have seen many of them far from the sea, in several glens in the North Highlands ; and have seen them so numerous on several

parts of the west coast, that I am persuaded they keep sight of each other there, as well as on both sides the Moray frith.

I am not certain if the vitrified forts keep sight of each other, or not; or if they surround the coasts, as the dry stone conick buildings do; and it would take more time than I can spare, to search them out, so as to be able to ascertain that point. All I can say at present on the point, is, that I could easily see the one at Inverness from Knockfarril; and could see Dun-Evan, in the shire of Nairn, from the one near Inverness, and Castle-Finlay from Dun-Evan.

These four are in sight of the sea; so is that near Fort-William. But I have seen others a considerable distance from the sea; such as, the castle-hill of Finvan, in the shire of Angus.

There appears nothing but the utmost simplicity of rude architecture in the remains of the dry stone sugar-loaf buildings; whereas the vitrified forts exhibit the effects of great skill, and the accomplishment

plishment of a work that must have cost great labour and time; notwithstanding, these so very different buildings might belong to the same period of time, and be raised by the same people: And this great disproportion might arise from circumstances inevitable, at that age of the world. Those ancients possessed the astonishing skill, of erecting vitrified walls with materials pretty easily melted down; but perhaps they knew not the use of any kind of cement in their power, fit to compact a firm and solid building, with well-bedded ruble stones. The circumstances, in the situations of these so different buildings, answer the conjecture exactly.

The vitrified forts are only found where the rock is of the plumpudding kind, which is easily vitrified; the conick structures are only found, where the stones rise large and square, and broad-bedded, but which would not be so easily vitrified.

I forgot before, Sir, to acquaint you, that I saw a peninsula rock, hanging over the sea, on the side of a pretty good little natural harbour, less than half a

mile from the house of Alexander Garden of Troop, Esq; near the miln of Troop, which had been fortified, by running a vitrified wall across the end of the rock next the land ; where there remain some strong fragments of the vitrified wall, still to be seen, sticking in the earth ; and there are some very obscure ruins of stone and lime work, which appear to have been very strong. This last is within the ruins of the vitrified wall ; and I suppose it has been a castle of strength, as what remains of a wall has been very thick ; and it is only accessible at one end, over a very narrow isthmus, where the vitrified wall had been erected. This is the only vitrified ruin I ever saw off a hill ; and this instance makes it appear to me probable, that this extraordinary method of fortification has reached all round the coast of the Moray frith, and all over the North and Highlands of Scotland, in such places where they had nothing but the plumpudding rock ; though perhaps many of the rocks they were built on, are tumbled into the sea.

In

In many places they may be grown over, and other buildings raised above the vitrified ruins, and those long since fallen to a heap of rubbish.

It is very remarkable, that all the vitrified ruins I have seen, are situated on the plumpudding rock.

The rocks at the miln of Troop, and great part of that neighbourhood, are a strong species of that kind, which the sea has excavated into many antic grots, and subterranean passages. There is one place near the harbour at Troop, where you descend a narrow, difficult, almost perpendicular path; but when you have reached the bottom, you find yourself in a fine, roomy area, surrounded by walls of rock on all sides, of thirty or forty feet high; from which, when the tide is out, there is a narrow dark passage to the sea, under a hill of five or six hundred feet high. This subterranean passage, by degrees, lets in a little light, and by and by opens into a wide expanse of sea and sky.

LETTER XIII.

WE are particularly indebted to two or three lucky circumstances, for having any remains of these remarkable monuments of antiquity left us.

The high and remote situation of the vitrified forts, and great size of the stones in many of the conick buildings, have preserved some of their ruins down to these late ages of the world.

I am confident, hundreds of the dry stone sugar-loaf buildings have been razed to the foundation. I have seen many places, where all the best of the stones were carried off, for the purpose of other buildings, so that little vestige remained of what they had been. But in some others, where the stones happened to be very large, and where we may suppose there never have been any stone buildings of any modern kind, there the dry stone conick structures are most entire.

The

The vitrified forts were raised too high, to tempt them to clear away the ruins in order to cultivate the soil; and the ruins were rendered totally useless, by being vitrified.

Were it not for these lucky circumstances, neither their great antiquity, nor their very singular appearance, would have saved them from the sacrilegious hands of monumental ravagers; of which there have been many, in all countries, and of all denominations; who, one would imagine, want to blot out the memory of every thing that has been, and make the face of the earth an universal blank. I am persuaded, there is not a curious intelligent person in this island, who has not something of this kind to complain of. This practice discovers a wretched want of taste; as such monuments are the ornament and the glory of a neighbourhood.

The destruction of every monument of antiquity, is a public loss; as such old structures have an excellent effect on the imagination.

Any

Any thing surprizing, or singular, affects the mind in no common sort. Fancy can restore many former scenes relative to such a place, or create a thousand probable ones ; and reflection will catch at many useful hints.

When we see such monuments of antiquity before our eyes, we will often say, Such and such were the people that were here in the days of old, and such were their great or glorious deeds. These were the people that repelled the force of such and such enemies ; that saved their country from foreign invaders, and conveyed liberty down to us their posterity.

By remains of antiquity, we can often trace the progress or decline of the arts, the æra of any practice or custom, or the time when any particular people or community flourished. And these monuments serve for ocular remembrancers, that such people did flourish, in such countries, or neighbourhoods.

I have now finished all I purposed troubling you with, concerning the monuments

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numents of remote antiquity, which I have taken notice of in the Highlands and North of Scotland. I beg leave to make my sincere acknowledgements, for the favourable reception the above letters met with from you, and for your opinion and advice.

As I pay great deference to your superior judgment in these matters, I will trust them to the candour of the public.

The vitrified forts deserve to be examined by better judges.

My letters have this merit, that I endeavoured to point out to you, all the most material circumstances that occurred to me; and I have advanced nothing in them, but what is strictly true.

It will give me great satisfaction, if they prove so lucky as to move the curiosity of the Learned, to enquire into, and examine those remains of antiquity; and I hope my letters will, at least, be so far useful to the curious, as to serve as an index, to point out where such things are to be found.

K

The

and the same day I went to see the
newly built bridge across the river at
the village of Chitambar. The bridge
is made of stone and is about 100
feet long. It is a very good bridge
and will be of great service to the
people of the village. After crossing
the bridge we went to the village of
Chitambar. The village is situated
on a hill and is surrounded by
forests. The people of the village
are very poor and live in small
huts. They grow rice and millet
as their main crops. The men
of the village are mostly farmers
and the women are mostly
housewives. The children of the
village are mostly boys and girls
of school age. The village
is very quiet and peaceful.
The people are very friendly
and are always ready to help
each other. The village is
located in a hilly area and
the houses are built on the
slopes of the hills. The
houses are made of mud
and thatch. The roofs are
made of thatch and are
very steep. The houses
are very small and
the rooms are very
dark. The houses are
very simple and
there is no electricity
or running water. The
people of the village
are very poor and
they have to work
hard to earn a living.
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in a hilly area and
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very simple and
there is no electricity
or running water. The
people of the village
are very poor and
they have to work
hard to earn a living.

The following LETTER has been communicated to the AUTHOR, on account of its containing a description of one of these fortified Hills. It is written by Mr JAMES WATT Engineer, to GEORGE CLERK-MAXWELL, Esq; one of the Commissioners of his Majesty's Customs in Scotland.

Birmingham, March 29. 1777.

DEAR SIR,

A BSENCE prevented me from answering your kind letter sooner. The notes, and indeed the observations, I made upon the fort at Craig-patrick, are too slight to furnish matter for a *memoir* upon that subject; nor is the drawing correct, as it blew hard, and was very cold upon the hill, which made me do the greatest part of the work from

K 2 memory,

memory, that evening, after I returned to Inverness.

Craig-patrick is a detached summit of a rocky hill, about a mile north of Inverness. It is elevated about 500 feet above the sea, and about 150 above the adjoining part of the hill. There are several other higher summits in the same line with it, but considerably distant. These form the northern boundary of the valley of Ness ; and there are also some northwards from it, but distant about a mile.

Towards the north-east, the ascent to the summit, though steep, is sloping, grassy, and smooth. The other sides are partly rocky precipices, and very steep, but not entirely inaccessible.

The rock of which the mountain consists, is of a granite species,—but not an uniform stone. It is composed principally of round water-worn pieces of a red granite, mixed with pieces of a stone which I call *granulated quartz*, which are generally of a greyish colour ; and also with

with pieces of the common quartz. The whole is cemented together, and the interstices filled up, by a coarse sand of the red granite.—This rock is externally full of fissures or natural separations, and would not be difficult to quarry.

The summit is flat, and of an oblong form, rounded at the corners, about 90 yards long, and 30 broad. All round it, there is a rampart about four feet high, rising by a gentle slope from the inside, but more steep to the outside,—which slope is continued downwards for about 20 feet perpendicular, and is tolerably regular, except upon the north-east end, where, I think, there is some interruption, and as it were the ruins of the rampart. The bottom of the outside slope is surrounded with a small hollow, beyond which there is a kind of second rampart, but more irregular than the first; and immediately under this second one, appears the natural rock. The flat place at top, the greatest part of the ramparts, and the slopes, are now covered with

with grass and moss ; but in many places they are bare, and show the materials of which they are composed. These materials greatly resemble the cinders or clinkers produced in a lime-kiln, being, in some parts, a vitrified spongy mass, with a glossy surface ; and, in other places, when it has been broke into for a small depth, you may see calcined, tho' unvitrified, matters mixed in large pieces among the spongy flag. It is evidently the native rock, vitrified ; and the granite parts seem to be the only ones which have come into fusion, and have formed the flag.

The ramparts both above and below, together with the slopes, seem all to have been in fusion at one time, and now to form one adhering mass of flag, no part of which seems to have undergone a perfect or thin fusion.

Where the lower rampart touches the rock, it seems in some places to be adherent to it. Where the surface of the flags in the ramparts are uncovered, they are rough

rough and irregular, and many detached pieces are scattered about upon the sides of the hill. It is said there was once a well, where there is now a hollow place within the upper rampart; but that it was filled up, to prevent sheep falling into it.

The country people call it the Giants Castle; but I could hear no tradition of its formation. For my own part, I think it a work of art, probably formed by piling up layers of stones and wood, and setting them on fire; but whether for the purpose of a fort, or some religious use, I will not take upon me to determine. I could wish that a cut were made across it, until they reached the solid rock. Its structure would then be laid open, and something might be discovered, that might throw light upon the intention of the constructors of so singular a fabrick.

LETTER

Individuum, which have, as we have seen, been found to exhibit the most marked tendency toward a more or less complete separation from the social life. And it is to this class of individuals that the author of the present paper belongs.

LETTER from Dr JOSEPH BLACK,
Professor of Chymistry in the university
of Edinburgh,—To the AUTHOR.

S. I. R,

I AM much obliged to you for the sight
of your letters concerning the vitrified
fortresses in the North. I had got for-
merly, from some of my friends, some
account of extraordinary vitrified walls
which they had seen in the Highlands ;
and Mr James Watt, who spent some
time in surveying a part of that country,
communicated a number of particular
observations which he had made upon
one of these ruins ; but we were not en-
abled to judge with any certainty, for
what purposes, or in what manner, these
hitherto unheard-of buildings had been
erected. It is very probable, that they

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were executed in some such manner as you have imagined. There are, in most parts of Scotland, different kinds of stone, which can, without much difficulty, be melted or softened by fire, to such a degree, as to make them cohere together. Such is the grey stone, called whin-stone, which, for some time past, has been carried to London to pave the streets. Such also is the granite, or moor-stone, which is applied to the same use, and pieces of which are plainly visible in some specimens of these vitrified walls, which I received from my friends.—There are also many lime-stones, which, in consequence of their containing certain proportions of sand and clay, are very fusible: And there is no doubt, that sand-stone, and pudden-stone, when they happen to contain certain proportions of iron, mixed with the sand and gravel of which they are composed, must have the same quality.—A pudden-stone composed of pieces of granite, must necessarily have it.

There

There is abundance of one or other of these kinds of stone in many parts of Scotland ; and as the whole country was anciently a forest, and the greater part of it overgrown with wood, it is easy to understand how those who erected these works, got the materials necessary for their purposes.

I am,

S I R,

Your obedient humble servant,

EDINBURGH,
April 18. 1777.

JOSEPH BLACK.

To Mr John Williams.

Top left: Seal of the Royal Society of Edinburgh, featuring a lion and unicorn flanking a shield with various symbols, topped by a crown.



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Lessons in Physics

